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# Unlocking the Therapeutic Potential of the Genus Senecio (Asteraceae): Essential Oil Composition and Pharmacological Insights

*Rivista Italiana delle Sostanze Grasse* • Article • 2025[Salihu, Abu Bakar Siddiq](#)<sup>a, b</sup>; [Salleh, Wan Mohd Nuzul Hakimi Wan](#)<sup>a</sup> ; [Rahim, Faezatul Alwani Mohd](#)<sup>a</sup>; [Zaini, Nur Nabilah Mohd](#)<sup>a</sup>; [Arzmi, Mohd Hafiz](#)<sup>c</sup><sup>a</sup> Department of Chemistry, Faculty of Science and Mathematics, Universiti Pendidikan Sultan Idris, Perak, Tanjong Malim, 35900, Malaysia[Show all information](#)

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## Abstract

Senecio is the largest and most complex genus in the family of the Asteraceae with more than 1,500 species distributed widely throughout the world. A comprehensive search of the electronic databases (1986–2023) using the keywords of ‘Senecio’ and ‘essential oil’ revealed that an essential oils composition breakdown is available for 57 species, with  $\alpha$ -pinene,  $\alpha$ -farnesene, germacrene D, p-cymene, myrcene,  $\alpha$ -terpinene, and caryophyllene oxide being the most identified components. The pharmacological activities have been summarized of different species including antimicrobial, antioxidant, repellent, antifungal, acaricidal, anti-inflammatory, cytotoxicity, phytotoxic, anticholinesterase, allelopathic, nematocidal, antimalarial, antileishmanial,  $\alpha$ -glucosidase, anticorrosive, analgesic, and toxicity. This review is expected to lay the foundation for further studies of this genus and provides guidance for selecting accessions of species with the best chemical profiles. © 2025, INNOVHUB [httpStazioni Sperimentali per l'Industria S.r.l](#) [httpArea Oli e Grassi](#). All rights reserved.

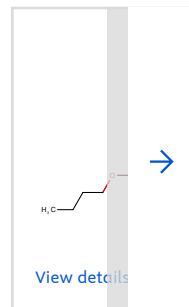
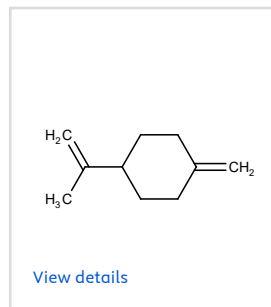
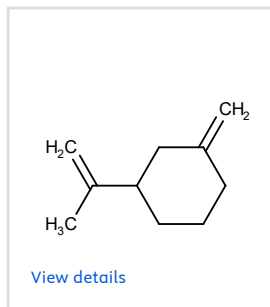
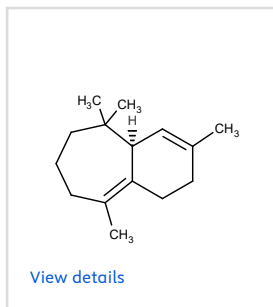
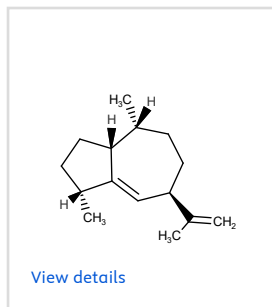
## Author keywords

antimicrobial; Asteraceae; composition; essential oil; Senecio;  $\alpha$ -pinene

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